Configurazione della funzionalità SLA IP con L3out per tenere traccia della route statica

Sommario

Introduzione Prerequisiti Requisiti Componenti usati Premesse Configurazione Esempio di rete Configurazioni Verifica Risoluzione dei problemi Informazioni correlate

Introduzione

In questo documento viene descritto come configurare IPSLA (Internet Protocol Service Level Agreement) in Cisco ACI (Application Centric Infrastructure) per tenere traccia del percorso statico, apprendere da un'uscita L3out e pubblicizzare un'altra uscita L3out solo se la subnet è raggiungibile dalla prima uscita L3out.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Software ACI versione 4.1 e successive
- L3out verso dispositivo o server esterno
- Chassis EX e -FX
- Tenere traccia della route per l'utilizzo delle sonde ICMP (Internet Control Message Protocol) e TCP (nell'esempio riportato viene utilizzato il probe ICMP)

Nota: ACI image IP SLA è supportato su tutti gli switch Cisco Nexus di seconda generazione, che includono gli chassis -EX e -FX. Leggere <u>le linee guida e le limitazioni</u> relative agli SLA IP.

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- ACI versione 5.2(2f)
- N9K-C93180YC-FX

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Premesse

Alcuni server dispongono di più interfacce (come un loopback) raggiungibili da ACI tramite l'indirizzo IP fisico del server. In questo caso, è possibile richiedere l'aggiunta di una route statica e l'annuncio esterno, ma solo se l'IP fisico del server è raggiungibile. Pertanto, la funzionalità di tracciamento degli SLA IP è una configurazione inevitabile che può essere raggiunta solo mediante la configurazione L3out verso tali server. Al momento le funzionalità di traccia dello SLA IP non sono supportate per la <u>route statica su un dominio bridge</u>. In questo documento verranno illustrati alcuni esempi di server e configurazioni dei percorsi di transito che utilizzano lo SLA IP.

Configurazione

- L3out verso Server e verso dispositivi N3K.
- Configurare la traccia dello SLA IP per l'indirizzo IP fisico del server.
- Configurare la route statica in L3out verso il server che utilizza il percorso IP SLA e annuncia da un altro L3out verso N3K.

Esempio di rete



Topologia ACI Lab

Configurazioni

Passi di riepilogo:

Criteri ACI fabric:

- Crea contratto (per questo esempio, un filtro predefinito comune che consente di utilizzare tutto il traffico, ma è possibile utilizzare un filtro specifico creato localmente nello stesso tenant per consentire il traffico specifico. in tal caso, accertarsi di autorizzare il protocollo che verrà utilizzato per il rilevamento degli SLA IP).
- Crea un nuovo L3out verso il server 10.100.0.100/24 (ACI side SVI 550 con indirizzo IP 10.100.0.254)
- Creazione di criteri di registrazione degli SLA IP (criteri di monitoraggio degli SLA IP, criteri di registrazione dei membri, criteri degli elenchi di registrazione)
- Aggiungere una route statica in L3out verso un server con tracklist SLA IP.
- Creare un nuovo L3out verso il dispositivo N3K che utilizza BGP. (EBGP) ACI AS 65535 e N3K AS 65536
- Esporta route statica da L3out verso N3K.
- Verificare la configurazione e la raggiungibilità.

1. Crea contratto (per questo esempio, utilizzare un filtro comune predefinito che consenta tutto il traffico; tuttavia, è possibile utilizzare un filtro specifico creato localmente nello stesso tenant per consentire il traffico specifico, ma in tal caso assicurarsi di consentire il protocollo che viene utilizzato per il rilevamento dello SLA IP).

TN_D (D) (D) (D) (D) (D) (D) (D) (D) (D) (D	ontract - Contract_L3out_BGP						0.0
◇ 囲 TN_D) ■ Application Profiles		Summary	Topology	Policy Peer Entities	Contract Exception	Faults	History
> 🖬 Networking	😟 😳 💿 🔕					Ó	土 共。
Standard	Alas: Global Alas:						î
> 🔛 imported > 🔛 Fitters	Scope: VRF VI QoS Class: Unspecified V						
) 🚍 Policies) 🚍 Services	Target DSCP: Unspecified Unspe						- 1
📾 Security (Beta)	Annotations						- 1
	Subjects						≘ +
	= Name Alias Aliow_Any	Filters common/default		Description			

Crea contratto

2. Creare un nuovo L3out verso il server 10.100.0.100/24 (ACI side SVI 550 con indirizzo IP 10.100.0.254).

TN_D	$\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$	L3 Outside - L3out Static server
~ Ⅲ тл_d	000	
> E Application Profiles		
V I Networking		
> 🚞 Bridge Domains		
> 🚞 VRFs		
> 🚞 L2Outs		Properties News Loss Challenge
Contraction Contraction Contraction		Alias
> 🛧 L3out_N3K_BGP		Description: Antional
✓ ▲ L3out_Static_server		
> 🔚 Logical Node Profiles		
> 🚞 External EPGs		Annotations: Click to add a new annotation
Route map for import and export route control	l -	
> 🚞 SR-MPLS VRF L3Outs		Provider Label: enter names separated by comma
> 🛅 Dot1Q Tunnels	4	Consumer Label: select an option
Contracts		Target DSCP: Unspecified
V 🛅 Standard		PIM:
> 🔁 Contract_L3out_BGP		PIMv6:
> 🛅 Taboos		Route Control Enforcement: Import
> imported		VRF: VRF_S
Filters		Resolved VRF: TN_D/VRF_S
> Policies		L3 Domain: TN_D_L3Dom
> Services		Route Profile for Interleak: select a value
Security (Beta)		Route Profile for Redistribution:
		 Source
		Enable BGP/EIGRP/OSPF: BGP OSPF EIGRP
		Route Control for Dampening:
		 Address Family Type
Crop L Sout		

Crea L3out



Collegamento del nodo a L3out

TN_D (P) (9)	O Logical Interfac	ce Profile - L3out_Static_serv	er_interfaceProfile							00
~ Ⅲ TN_D								Police	Faults	History
> 🚞 Application Profiles								- one		(10000)
Wield Strategy Str						General Routed	Sub-Interfaces	Routed Interfaces	SVI Fir	oating SVI
> 🥅 Bridge Domains	0.000								_	
> 🥅 VRFs										0 ±
> 🚞 L20uts										11 +
~	 Path 	Side A II	P Side B IP	Secondary IP Address	IP Address	MAC Address	MTU (bytes)	Encap	Encap Se	cope
> 🚯 L3out_N3K_BGP	Pod-1/Node-10	01/eth1/3			10 100 0 254/24	00-22-80-58-19-55	inhadit	ulan-507	Local	
V 🔂 L3out_Static_server	100 1/1000 10	0 (94011)0			10.100.0.204/24	00.22.00.10.10.1	en que	101 007	Local	
Logical Node Profiles										
El L3out_Static_server_nodeProfile										
> E Configured Nodes										
Logical Interface Profiles										
L3out_Static_server_interfaceProfile	•									
V 🚞 External EPGs										
EXT_static_EPG										

Collegamento dell'interfaccia a L3out

TN_D D@0	External EPG - EX	T_static_EPG					0.6
> ∰ 1N_0						Doliny Operational	Health Faulte History
> 🚍 Application Profiles						Policy Operational	Healur Paulos History
V Retworking					General Co	ntracts Inherited Contracts	Subject Labels EPG Labels
> 🧱 Bridge Domains	0000						A 1 44
> 🧱 VRFs							0 2
> 🖬 L2Outs	Properties Name:	EXT_static_EPG					0
V 🖿 L3Outs	Alias:						
> 🚯 L3out_N3K_BGP	Annotations:	Click to add a new an	notation				
L3out_Static_server	Global Alias:						
Logical Node Profiles	Description:						
El3out_Static_server_nodeProfile							
Configured Nodes							
Logical Interface Profiles	Contract Exception Tex	32771					
L3out_Static_server_interfaceProfile	Contract Deepter rag.	VOE P					
V 🚍 External EPGs	Besolved VRF	unito-TN D/ctv-VRE S					
EXT_static_EPG	QoS Class:	Unspecified					
Route map for import and export route control	Target DSCP:	Unspecified					
> 🔤 SR-MPLS VRF L3Outs	Configuration Status	applied					
> 🧱 Dot1Q Tunnets	Configuration Issues:						
> 🔤 Contracts	Preferred Group Member:	Exclude Include)				
> 📰 Policies	Inter Col PDD Inclusion						
> 📷 Services	Intra Ext-EPG Isolation.	Emorced Unertoin	sed				
Security (Beta)	Subnets:						
> O+ Quick Start		 IP Address 	Scope	Name	Aggregate	Route Control Profile	Route Summarization Policy
		0.0.0.0/0	External Subnets fo	r the Extern			~
						Show U	sage Reset Submit

Configura EPG esterno



Collegamento del contratto a L3out

3. Creare criteri di registrazione del contratto di servizio IP (criteri di monitoraggio del contratto di servizio IP, criteri di registrazione dei membri, criteri dell'elenco di registrazione).

Criteri di monitoraggio SLA IP:

TN_D	$\bigcirc \bigcirc \bigcirc \bigcirc$	IP SLA Monitoring Policy - ICI	MP_Monitor		
∨ Щ тл_d	^				
> 🧮 Application Profiles					
> 🚞 Networking		8 🗸 🛆 🕐			
> Contracts		Properties			
		Name:	ICMP_Monitor		
Protocol		Description:	optional		
> 🚍 BFD					
> 🧮 BFD Multihop		SLA Type:		L2Ping	HTTP
> 🧮 ND RA Prefix		SLA Frequency (sec):	5		
> 🚍 BGP		Detect Multiplier:	3	\sim	
> 🚞 Custom QoS		Request Data Size (bytes):	28		
> 🚞 Data Plane Policing		Type of Service:	0		
> 🗖 DHCP		Operation Timeout (milliseconds):	900		
> 🧮 EIGRP	· · · · · · · · · · · · · · · · · · ·	Thrashold (milliseconds):	900		
> 🧮 End Point Retention		Traffic Class Value:	900		
> 🚍 First Hop Security		Tallic Glass value.	0	\square	
> 🔤 HSRP					
> 💼 IGMP Interface					
> IGMP Snoop					
V 🖬 IP SLA					
> Track Lists					
> 🗖 Track Members					

Configura criterio di monitoraggio SLA IP

Membri di registrazione SLA IP:

TN_D	000	Track Member - S	Server_Phys	ical_IP								0.0
> Ⅲ TN_D	~								Defen	Charles	Faults	
> C Application Profiles									Policy	Stats	Faults	History
> 🚞 Networking											0	÷ **-
> 🚞 Contracts		Properties										
🗠 🚍 Policies			Name:	Server_Physical_IP								
V 🚞 Protocol			Description:									
> 🚍 BFD												
> 🚍 BFD Multihop		Track ID Of Object	To Be Tracked:	2000								
> 🚞 ND RA Prefix		Destination IP	To Be Tracked:	10.100.0.100								
> 🚍 BGP		Scope of	Track Member:	L3Out - L3out_Static_set	m 🗢 🔁							
> 🚍 Custom QoS			IPSLA Policy:	ICMP_Monitor	V 🚱	Stat	tus of destination t	track IP				
> 🚞 Data Plane Policing			Deployments:	Node ID	Operation Number	 Operation Status		Latest Operation Error Message				
> 🚍 DHCP				Pod-1/Node-101	2000	Reachable		OK				
> 🚍 EIGRP												
End Point Retention												
> 🧮 First Hop Security												
> 🚍 HSRP												
> 🚍 IGMP Interface												
> 🚍 IGMP Snoop												
V 🚍 IP SLA												
IP SLA Monitoring Policies												
ICMP_Monitor												
> 🧮 Track Lists												
Track Members												
Server_Physical_IP												

Aggiunta del criterio IP da monitorare

Criterio elenco brani:

TN_D	000	Track List - Tracking_Server_Physical_IP				0.0
~ 開 ™_D	<u>^</u>			C	F	
> 🚞 Application Profiles			Policy	Stats	Faults	History
> 🚍 Networking					0	± %-
Contracts		Properties				
V 🚔 Policies		Name: Tracking_Server_Physical_IP				
Protocol		Description: optional				
> 🚞 BFD						
> 🚞 BFD Multihop		Type of Track List: Threshold percentage				
> 🥅 ND RA Prefix		Percentage Up (percentage): 1				
> 🚞 BGP		Veccenzgo up shoute te greater than Veccenzgo up shoute te greater than Veccenzgo up				
> 🧮 Custom QoS		Percentage cover (percentage), or				
> 🚞 Data Plane Policing		Track list to track member				+
> 🚞 DHCP		reision: Track Member				
> 🧰 EIGRP		TN_D/Server_Physical_IP				
> 🧰 End Point Retention						
> 🧮 First Hop Security						
> 🚞 HSRP						
> 🥅 IGMP Interface						
> 🥅 IGMP Snoop						
V 🚞 IP SLA						
V IP SLA Monitoring Policies						
E ICMP_Monitor						
- Track Lists						
Tracking_Server_Physical_IP						
V 🚍 Track Members						
Server_Physical_IP						

Configura elenco brani

4. Configurare la route statica in L3out verso il server con i criteri di tracklist dello SLA IP appena creati.

CISCO APIC								admin 🔍	0 2	00
System Tenants Fabric	Virtual Networking	Admin Ope	rations Apps Integ	grations						
ALL TENANTS Add Tenant Tenant !	Search: name or descr	commo	n TN_D donwang2	SERVERS edge						
TN_D	D		Accoriation							~ •
✓ Ⅲ TN_D	<u> </u>	3.6 11000	A33000000							00
> Application Profiles								Policy	Faults	History
Networking		8							0	± %-
> 🚞 Bridge Domains		Prop	erties							
> 🖿 VRFs			Node ID:	topology/pod-1/node-101						^
> 🖿 L2Outs			Router ID:	101.101.101.101						
V 🖬 L30uts		Use	Router ID as Loopback Address:	This setting will be ignored if loopback addresse	s are defined in the table below.					
> A L3out_N3K_BGP			Loopback Addresses:							· +
V 🚯 L3out_Static_server				▲ IP						
Cogical Node Profiles						No items have been for	und.			
Clout_State_server_nod	eProfile					Select Actions to create a n	ewitem.			
Conguted roots	-101									
> E Lonical Interface Profi	lan in the second se		Intervite Learning Addresses							_
External EPGs			intersite Loopback Addresses.	. 10						- +
Route map for import and ex	port route control			* IP						_
SR-MPLS VRF L3Outs						No items have been fo Select Actions to create a n	und. ew item.			
> E Dot1Q Tunnels										
> 🧮 Contracts	Lea	101								
> 🧮 Policies	15.	2(2f)	Static Routes:							· +
> 🚞 Services		Eth1/3 L3out Static server		 IP Address 	Description	Track	Policy	Next Hop IP		
E Security (Beta)	13Out	Encap vian 507		200.0.0.1/32		TN_D	/Tracking_Server_Physical_IP	10.100.0.100		
Or Quick Start	coour	VRF: TN_D:VRF_S			Static route added wit	h IP SLA Track which tracking	physical IP of server.			
	Physical IP: 10	.100.0.100/24								~
	Loopback 507	: 200.0.0.1/32								
								Show Usage R		

Configura route statica in L3out

5. Creare un nuovo L3out verso il dispositivo N3K che utilizza il protocollo Border Gateway Protocol (BGP). (EBGP) ACI AS 65535 e N3K AS 65536.

TN_D	00	L3 Outside - L3out_N3K_BGP
∽ Щ ти_0		
> Application Profiles		
🗸 🚞 Networking		
> 🧮 Bridge Domains		
> 🚍 VRFs		
> 🚍 L2Outs		Properties
V 🖬 L3Outs		Name: L3out_N3K_BGP
V 🔿 L3out_N3K_BGP		Puese Descriptions
Logical Node Profiles		Description. Optional
✓		
> 🚞 Configured Nodes		Annotations: 🕀 Click to add a new annotation
Logical Interface Profiles		Global Alias:
L3out_N3K_BGP_interfaceProfile		Provider Label:
BGP Peer 100.0.0.2- Node-102/1/3		Consumer Label: select an option
🗸 🚞 External EPGs		Target DSCP: Unspecified
EXT_N3K_BGP_EPG		PIM:
> The second		PIMv6:
> 合 L3out_Static_server		Route Control Enforcement: Import
> 🔤 SR-MPLS VRF L3Outs		VRE S
> 🚍 Dot1Q Tunnels		Resolved VRF: TN D/VRF S
> 💳 Contracts	•	L3 Domain: TN D L3Dom
> 🧮 Policies		Route Profile for Interleak: select a value
> 💳 Services		Route Profile for Redistribution:
💳 Security (Beta)		▲ Source
> 🕞 Quick Start		
		Enable BGP/EIGRP/OSPF BGP OSPF EIGRP
		Route Control for Dampening:
		 Address Family Type

Configurare il protocollo BGP

ମନ୍ଦ୍ର ମହାର	Lonical Noda Drofile - L'Arut D	2D. partaDrafila		
- E N 0	Collicativona Linua - ContCo	ar_invertoine		
) El Acolection Profiles				
Networking				
> 🖿 Bridge Domains	Depending			
	Nam	e: L3out. BGP_nodeProfile		
> 🖿 120us	Descriptio	n: optional		
V 📑 130m				
V 📣 LSAUL/NEK_BOP	All			
🗸 🚍 Logical Node Profiles	Target DSC	P. Unpedied		
V 9 L3out_B0P_nodeProfile	Node	6		
> 🔛 Configured Nodes		 Note D 	Router (D	Loonback Address
Logical Interface Profiles		transmutrati-Linoite-102	102 102 102 102	102 102 102 102
I Sout_N3K_B3P_interfaceProfile		report grap to the test	100.100.100	100 100 100 100
BSP Paer 100.0.0.2- Node-102/1/3				
V 🖬 External EPCs				
ECT_NIK_BOP_EPG				
> 🚍 Route map for import and export route control				
> 🙆 L3out_Static_server	EGP Peer Connectivit	Y		
> 🚞 SR-MPLS VRF L3Outs		Peer IP Address	Peer Controls	Interface
> 🚞 DottQ Turneti		100.0.0.2		Pod-1/Node-102/eth1/3
> 🚞 Contracts	•			
> 🚔 Policies				
> 🖿 Services				
E Security (Beta)				
> O Quick Start				
	Create BGP Protocol Profi	e 🖸		
	Create DFD Multihop Protocol Pron	e. U		

Profilo peer BGP



Configurare i criteri peer BGP



Configura profilo interfaccia logica in L3out

cisco APIC		0 0 0 0 0 0 minte
System Tenants Fabric Virtual Networking Adm	dmin Operations Apps Integrations	
ALL TENANTS Add Tenant Tenant Search: Iname or cliescr	i common i 114,0 i donwang2 i 508/085 i edge	
TN_D	ROOM REPORTED AND AND ADD	
~ 囲 1N.0	COM Commence - Drillow Bon Texa	06
> 🖬 Application Profiles		Policy Operational Health Faults History
Wetworking		General Contracts Inherited Contracts Subject Labels EPG Labels
> 🔛 Bridge Comains		A 1 4
> 🔛 VIE's		V 1 A.
> 🔤 L20vis	Properties Name: DCL.NDL.800_EP0	*
	Akac	
 A Date NOCIOP 	Amobations 🚱 Citck to add a new annotation	
Upper Node Profiles	Gobal Alas:	
 Education and a second s	Descriptional	
 Complete Notes El Lorinal Interface Burdles 		
V E Lind NIK BOP Internetical	pcTag: 16385	
BCP Peer 100 0 0 2- Node-102/1/3	Contract Designion Tag:	
V 🖬 Deternal DPCa	Configured VHF Name: VHF_S	
E DXT_NOK_BOP_EPG	Resolved WPF units TAL (Octor VPF _5	
Route map for import and export route control	terror terrar (Vispaninu)	
> 🕰 Läsut_Static_server	Programming Strategy and Control Contr	
> 🔤 SR-MPLS VIP LOOKS	Contiguration Issues:	
> 🔛 Dot1Q Tunnels	Endered Group Member Exclusion Industry	
> El Contracts	tata far-RKS totates Entered	
> El Policies		
> El Services	abate to a second	Productional Backlass Comparison and Data
Ecourty (leta)	Approprie URA Approprie Ap	Hove summarized in the summari
> C+ Guocsan	VVVVV Dubina Joveski te Custra or V	
	Exercise contract Exercise Contract Contract Contract Contract	

Subnet di esportazione EPG esterna in transito L3out

TN_D	090	External EPG - EXT_N3	K_BGP_EPG						
> Ⅲ TN_0 > Ⅲ Appleation Profiles									Policy Operational
V 🖿 Networking								General	Contracts Inherited Contracts
> 🔤 Bridge Domains > 🚍 VRFs		🕈 Healthy 🕜 🕐 🕐							
> 🔤 L20us		A Contract Type: Contract	 Tenant 	Tenant Alias	Contract Type	Provided / Consumed	QoS Class	State	Label
✓ ▲ L3ort_N3K_80P		Contract_L3out_BGP	TN_D		Contract	Consumed	Unspecified	formed	
✓ I Logical Node Profiles ✓ 1 Logical Node Profile									
> 🧱 Configured Nodes									
 Elsout, NIK_BOP_interfaceProfile 									
9 BCP Peer 100.0.0.2 - Node-102/1/0									
1 EVT M/W 900 EV0									

Come allegare un contratto a un EPG esterno

6. Esportare la route statica da L3out verso N3K.

```
switchname N3K
feature bgp
feature interface-vlan
interface Vlan550
 no shutdown
 vrf member BGP_L3out
 ip address 100.0.2/30
interface loopback200
 vrf member BGP_L3out
 ip address 30.30.30.1/32
interface Ethernet1/1
 switchport mode trunk
router bgp 65536
 address-family ipv4 unicast
 neighbor 100.0.0.1
 vrf BGP_L3out
   router-id 3.3.3.3
   address-family ipv4 unicast
     network 30.30.30.1/32
   neighbor 100.0.0.1
     remote-as 65535
     update-source Vlan550
     address-family ipv4 unicast
```

Verifica

Fare riferimento a questa sezione per verificare che la configurazione funzioni correttamente.

Nexus 3K



Annuncio route di transito spiegato dalla topologia

N3K# routing vrf BGP_L3out

N3K%BGP_L3out# show ip route IP Route Table for VRF "BGP_L3out" '*' denotes best ucast next-hop '**' denotes best mcast next-hop '[x/y]' denotes [preference/metric] '%' in via output denotes VRF 30.30.30.1/32, ubest/mbest: 2/0, attached *via 30.30.30.1, Lo200, [0/0], 02:35:27, local *via 30.30.30.1, Lo200, [0/0], 02:35:27, direct 100.0.0/30, ubest/mbest: 1/0, attached *via 100.0.0.2, Vlan550, [0/0], 05:52:18, direct 100.0.0.2/32, ubest/mbest: 1/0, attached *via 100.0.0.2, Vlan550, [0/0], 05:52:18, local 200.0.0.1/32, ubest/mbest: 1/0 *via 100.0.0.1, [20/0], 02:32:36, bgp-65536, external, tag 65535

Il loopback del server è raggiungibile con l'origine come indirizzo di loopback N3K.

N3K

interface loopback200
 vrf member BGP_L3out
 ip address 30.30.30.1/32

N3K# ping 200.0.0.1 vrf BGP_L3out source 30.30.30.1

PING 200.0.0.1 (200.0.0.1): 56 data bytes 64 bytes from 200.0.0.1: icmp_seq=0 ttl=252 time=0.94 ms 64 bytes from 200.0.0.1: icmp_seq=1 ttl=252 time=0.729 ms 64 bytes from 200.0.0.1: icmp_seq=2 ttl=252 time=0.658 ms 64 bytes from 200.0.0.1: icmp_seq=3 ttl=252 time=0.706 ms 64 bytes from 200.0.0.1: icmp_seq=4 ttl=252 time=0.655 ms --- 200.0.0.1 ping statistics ---5 packets transmitted, 5 packets received, 0.00% packet loss round-trip min/avg/max = 0.655/0.737/0.94 ms

Tabella di route ACI Leaf 102 (che ha L3out verso Nexus 3K).

Leaf102# show ip route vrf TN_D:VRF_S

```
IP Route Table for VRF "TN_D:VRF_S"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%' in via output denotes VRF
10.100.0.0/24, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [200/0], 02:56:36, bgp-65535, internal, tag 65535
30.30.30.1/32, ubest/mbest: 1/0
```

```
of N3K.
    *via 100.0.0.2%TN_D:VRF_S, [20/0], 02:44:34, bgp-65535, external, tag 65536
100.0.0/30, ubest/mbest: 1/0, attached, direct
    *via 100.0.0.1, vlan19, [0/0], 05:09:37, direct
100.0.0.1/32, ubest/mbest: 1/0, attached
    *via 100.0.0.1, vlan19, [0/0], 05:09:37, local, local
101.101.101.101/32, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [1/0], 02:56:36, bgp-65535, internal, tag 65535
102.102.102.102/32, ubest/mbest: 2/0, attached, direct
    *via 102.102.102.102, lo5, [0/0], 16:49:13, local, local
    *via 102.102.102.102, lo5, [0/0], 16:49:13, direct
200.0.0.1/32, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [1/0], 02:42:15, bgp-65535, internal, tag 65535
```

Verifica della configurazione dello SLA IP Leaf 101 dalla CLI.

Leaf101# show ip sla configuration IP SLAs Infrastructure Engine-III Entry number: 2000 Owner: owner-icmp-echo-dme Taq: Operation timeout (milliseconds): 900 Type of operation to perform: icmp-echo Target address/Source address: 10.100.0.100/0.0.0.0 Traffic-Class parameter: 0x0 Type Of Service parameter: 0x0 Request size (ARR data portion): 28 Verify data: No Vrf Name: TN_D:VRF_S Schedule: Operation frequency (seconds): 5 (not considered if randomly scheduled) Next Scheduled Start Time: Start Time already passed Group Scheduled : FALSE Randomly Scheduled : FALSE Life (seconds): Forever Entry Ageout (seconds): 3600 Recurring (Starting Everyday): FALSE Status of entry (SNMP RowStatus): Active Threshold (milliseconds): 900 Distribution Statistics: Number of statistic hours kept: 2 Number of statistic distribution buckets kept: 1 Statistic distribution interval (milliseconds): 20 History Statistics: Number of history Lives kept: 0 Number of history Buckets kept: 15 History Filter Type: None

Leaf101# show track brief

TrackId	Туре	Instance	Parameter	State	Last Change
4	IP SLA	2000	reachability	up	2021-09-16T18:08:42.364+00:00
3	List		percentage	up	2021-09-16T18:08:42.365+00:00

Leaf101# show track

```
Route prefix 200.0.1/32

Track 2

IP SLA 2000

reachability is up

6 changes, last change 2021-09-16T00:01:50.338+00:00

Tracked by:

Track List 1
```

Verifica con il comando Query oggetto gestito (Moquery):

apic1# moquery -c fvIPSLAMonitoringPol -f 'fv.IPSLAMonitoringPol.name=="ICMP_Monitor"'
Total Objects shown: 1

# fv.IPSLAMonitoringPol							
name	:	ICMP_Monitor					
annotation							
childAction							
descr	:						
dn	:	uni/tn-TN_D/ipslaMonitoringPol-ICMP_Monitor					
extMngdBy	:						
httpMethod	:	get					
httpUri	:	/					
httpVersion	:	HTTP10					
ipv4Tos	:	0					
ipv6TrfClass	:	0					
lcOwn	:	local					
modTs	:	2021-09-15T21:18:48.195+00:00					
monPolDn	:	uni/tn-common/monepg-default					
nameAlias	:						
ownerKey	:						
ownerTag	:						
reqDataSize	:	28					
rn	:	ipslaMonitoringPol-ICMP_Monitor					
slaDetectMultiplier	:	3					
slaFrequency	:	5					
slaPort	:	0					
slaType	:	icmp					
status	:						
threshold	:	900					
timeout	:	900					
uid	:	15374					
userdom	:	:all:					

apic1# moquery -c fvTrackMember -f 'fv.TrackMember.name=="Server_Physical_IP"' Total Objects shown: 1

fv.TrackMember : Server_Physical_IP name annotation : childAction : descr : : uni/tn-TN_D/trackmember-Server_Physical_IP dn dstIpAddr : 10.100.0.100 extMngdBy : : 2000 id id : 2000 lcOwn : local modTs : 2021-09-15T21:16:22.992+00:00 monPolDn : uni/tn-common/monepg-default nameAlias : ownerKey : ownerTag :

rn : trackmember-Server_Physical_IP
scopeDn : uni/tn-TN_D/out-L3out_Static_server
status :
uid : 15374
userdom : :all:

apic1# moquery -c fvTrackList -f 'fv.TrackList.name=="Tracking_Server_Physical_IP"'
Total Objects shown: 1

<pre># fv.TrackList</pre>		
name	:	Tracking_Server_Physical_IP
annotation	:	
childAction	:	
descr	:	
dn	:	uni/tn-TN_D/tracklist-Tracking_Server_Physical_IP
extMngdBy	:	
lcOwn	:	local
modTs	:	2021-09-15T07:41:15.958+00:00
monPolDn	:	uni/tn-common/monepg-default
nameAlias	:	
ownerKey	:	
ownerTag	:	
percentageDown	:	0
percentageUp	:	1
rn	:	tracklist-Tracking_Server_Physical_IP
status	:	
type	:	percentage
uid	:	15374
userdom	:	:all:
weightDown	:	0
weightUp	:	1

Risoluzione dei problemi

Al momento non sono disponibili informazioni specifiche per la risoluzione dei problemi di questa configurazione.

In caso di disconnessione del collegamento o se l'indirizzo IP fisico non è raggiungibile, il contratto di servizio ACI IP visualizza il 'timeout' dell'IP di destinazione dopo il raggiungimento della soglia configurata.



Interfaccia L3out non attiva

TN_D	001	Track Member - Server_Physi	ical_IP				
V III TN_D	^						Polic
> Networking							
> Contracts		Properties					
V 🚍 Policies		Name:	Server_Physical_IP				
V 🚍 Protocol		Description:					
> 🖿 BFD							
> 🧮 BFD Multihop		Track ID Of Object To Be Tracked:	2000				
> 🧮 ND RA Prefix		Destination IP To Be Tracked:	10.100.0.100				
> 🧮 BGP		Scope of Track Member:	L3Out - L3out_Static_serv	V 🛃			
> 🖿 Custom QoS		IPSLA Policy:	ICMP_Monitor				
> 🚞 Data Plane Policing		Deployments:	Node ID	Operation Number	Operation Status	Latest Operation Error Message	
> 🖿 DHCP			Pod-1/Node-101	2000 ms (2seconds)	Unreachable	Timeout	
> 🖿 EIGRP							
> 🚞 End Point Retention							
> 🚞 First Hop Security							
> 🖿 HSRP							
> 🔚 IGMP Interface							
GMP Snoop							
🖂 🚞 IP SLA							
> IP SLA Monitoring Policies							
> 🚞 Track Lists							
Track Members							
Server_Physical_IP							

Stato collegamento monitoraggio SLA IP dopo collegamento non attivo

Verifica Leaf 101 CLI (è possibile vedere il timeout per "Last Operation return code").

```
Leaf101# show ip sla statistics

IPSLAs Latest Operation Statistics

IPSLA operation id: 2000

Latest RTT: NoConnection/Busy/Timeout

Latest operation start time: 23:54:30 UTC Wed Sep 15 2021

Latest operation return code: Timeout

Number of successes: 658

Number of failures: 61

Operation time to live: forever
```

Non appena il server è raggiungibile, visualizza lo stato OK.



Stato monitoraggio SLA IP dopo l'attivazione del collegamento

Leaf101# show ip sla statistics IPSLAs Latest Operation Statistics IPSLA operation id: 2000 Latest RTT: 1 milliseconds Latest operation start time: 00:03:15 UTC Thu Sep 16 2021 Latest operation return code: OK Number of successes: 18 Number of failures: 86 Operation time to live: forever

Informazioni correlate

- Guida alla configurazione delle reti di layer 3 di Cisco APIC, versione 5.2(x)
- Documentazione e supporto tecnico Cisco Systems